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OCTOBER 1965
VOL. 31 NO. 3

Soil Conservation

DEVOTED TO THE WISE USE OF LAND AND WATER RESOURCES

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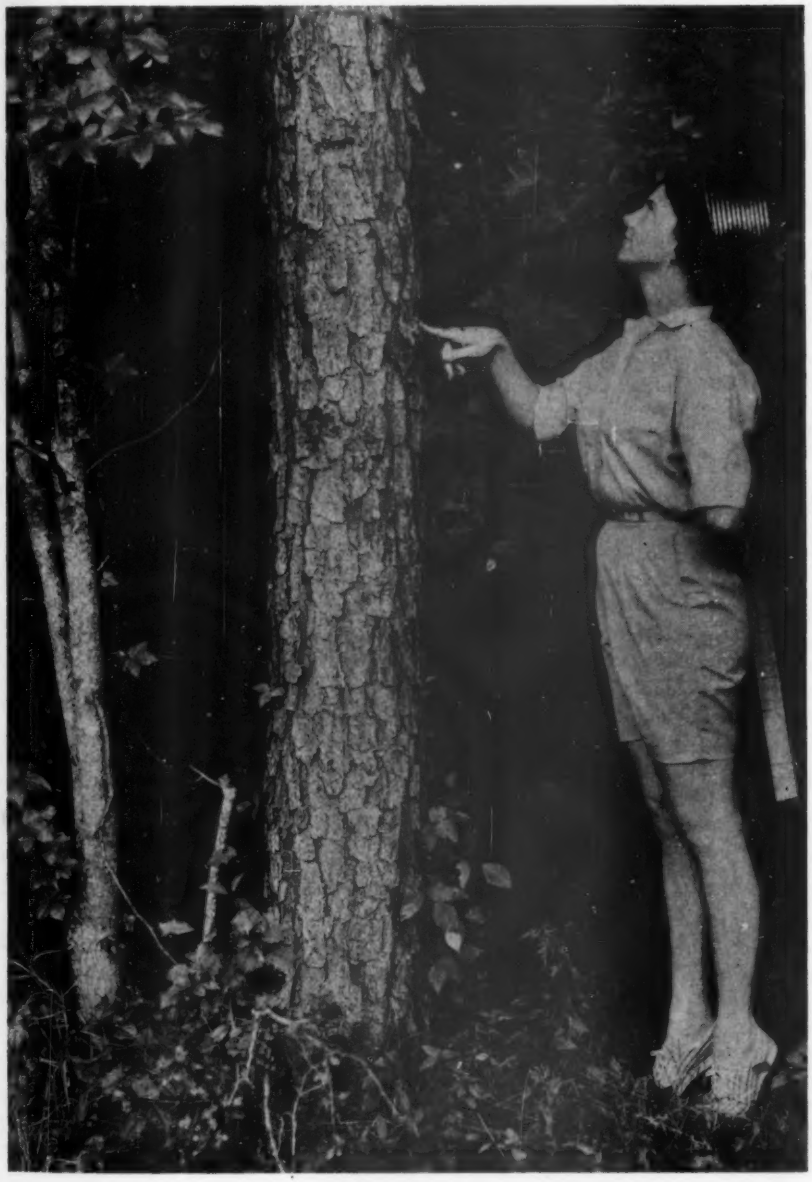

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SOIL CONSERVATION SERVICE

U. S. DEPARTMENT OF AGRICULTURE

Erosion . . .

Watershed project plans and river basin studies continue to pinpoint critical areas of active erosion that must be healed to protect valley lands and waters from sediment damage.

These problem areas are concrete examples of "the unfinished job" of conservation described so eloquently by retiring Deputy Administrator Dykes (June *Soil Conservation*) and defined by Conservation Needs Inventory statistics.

As a followup of that challenge, our lead article this month (p. 51) reexamines the erosion problem in the region that brought forth the conservation movement.

Information Specialist Sellers Archer interviewed our staff specialists at the Ft. Worth Regional Technical Service Center and dug into watershed and river basin reports to give us an up-to-date appraisal of the erosion problem in the South.

Success: New economic life has rewarded communities that met widespread erosion with wise adjustments in land use and thorough conservation treatment. John Cross' story of the Dorcheat Soil and Water Conservation District, La., (p. 60) shows what can be (and in many places has been) done.

COVER: An Arkansas miss points out a tree in the Lafayette County Soil and Water Conservation District chosen for cutting by use of the woodland information stick for southern pines.

Soil Conservation

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Gullied area in the Caney Creek watershed in Arkansas was smoothed and sodded to bermudagrass.

The unfinished job . . .

Erosion in the South

Critical areas still a challenge in early arena of conservation

RAMPANT gully erosion in the Southeast was in the spotlight 30 years ago as the Nation awoke to the menace of soil erosion.

The worst of the big gullies have been contained, if not stabilized, and the conservation movement they set in motion has made substantial progress in controlling the associated sheet erosion and soil depletion caused by then prevailing land practices.

A reappraisal of that early arena of soil conservation shows much done but more still to be done. The Conservation Needs Inventory reveals that in the South, as elsewhere in the Nation, roughly two-thirds of the cropland susceptible to erosion still needs conservation treatment.

The acreage of cropland in that region has declined, however, in response to conservation efforts coupled with economic and technological pressures. As a result, in the 14 States from Virginia to Texas the percentage of remaining cropland still needing treatment for erosion control is less than the national average—43 percent compared to 49.

The area, of course, contains extensive acreages of low-lying coastal plain where excess water, rather than erosion hazard, is the major conservation problem. The 50 million acres of cropland in those States still inadequately treated for erosion is concentrated in the uplands of the Appalachian, Piedmont, upper Coastal Plain, and other inland sections of the region.

These unstable soils continue to be a major concern of conservationists. It was in such areas that Hugh Bennett first began mapping erosion in Louisa County, Va.; Fairfield County, S. C.; Lauderdale County, Miss.; and elsewhere. His reports, although largely ignored for many years, laid the groundwork for the Soil Conservation Act of 1935.

Providence Cave, a huge gully in Stewart County, Ga., was said to have started from the roof drip from a barn. As it grew it gobbled up the barn, the farmhouse, and several hundred acres of land.

Similar gullies were destroying large areas of the upper Coastal Plain and Piedmont Plateau in Georgia, Alabama, and South Carolina and the loess hills along the lower Mississippi River.

The menacing spectacle of these cancers on the landscape, coupled with clouds of dust from the Great Plains, gave impetus to the movement that saw the activation of soil conservation districts throughout the Nation in the late Thirties and early Forties.

Ten of the 14 States referred to above are now completely covered by soil conservation districts. Only a handful of counties, mostly nonagricultural, scattered through the others remains outside organized districts.

To grass and trees

The conservation drive, aided by economic forces, moved clean-tilled row crops off the more erosion-prone hillsides of the South. Much of the crops was replaced by grass and trees, and the rest concentrated on soils better suited to cultivation.

Cotton plantings in the South Carolina-Georgia part of the the Piedmont dropped from 2,340,000 acres in 1930 to 534,000 acres in 1955. Landowners made similar reductions in corn acreage.

By 1955 they had devoted three-fourths of all their land to nontilled crops and miscellaneous uses; nearly 95 percent of their cotton and corn was planted on land classes I to III, the best for cropland.

All across the South the story is the same. There are now about one-third as many acres of cotton and one-fourth as much corn as in 1930—and it is generally concentrated on the less erodible land.

By the end of fiscal year 1964, landowners in the 14 States had planted 29.3 million acres of new pasture and hay land and 1.8 million acres of range. They were using 4 million acres of grass and legumes in rotation.

Trees had been planted to establish 8.3 million acres of woodland.

On the land remaining in cultivation, conservation cropping systems were used on 41 million acres, contour farming on 20 million, cover and green manure crops on 13.8 million, and crop residue management on 36.8 million.

Farmers had built 792,500 miles of terraces and 201.7 million feet of diversions and had established 615,000 acres of grassed waterways.

"If erosion is not the immediate and critical danger now that it was when Hugh Bennett and his colleagues aroused the public to its menace, it is because a good start has been made—not because the problem is solved," says H. B. Martin, Administrator's Field Representative for the South. "The tremendous job that has been done is worthy of the acclaim it has received. But success has tended to make us overlook the fact that our accomplishments are just a beginning on a Herculean task.

Just a beginning

"There are serious erosion conditions remaining to be corrected, and vigilant effort is needed to keep susceptible soils effectively protected after the basic treatments are applied."

What, then, of the problems pointed out by early soil conservationists?

Gully erosion is adequately controlled only in its less severe forms. Its stirrings, like those of a sleeping giant, must be constantly watched.

Georgia's Providence Cave area is now a tourist attraction advertised as the "Little Grand Canyon." It, like others of the more spectacular examples, is a consequence of soil and geologic conditions that make its control impractical. Such mammoth gullies can only be isolated by withdrawal of intensive land use and diversion of water, leaving them as permanent features of the landscape while nature works its slow healing process.

An active section at the head of the Providence Cave gully is justly billed as "Little Grand Canyon."

Progress on critical areas

In other areas, more progress has been made in correcting critical erosion conditions. The upper reaches of the Yazoo and Little Tallahatchie watersheds in Mississippi are an example. There gully and sheet erosion long ago had dissected the landscape and crippled agriculture.

Solon Robinson, a pioneer conservationist who visited the area more than a hundred years ago, wrote of it as "the land of gullies." Corrective treatment was started there in 1946 in 2 of the first 11 congressionally authorized flood prevention projects.

Today, two-thirds of the 726,000 acres of critical areas are protected with grass and trees. Landowners have planted another 192,000 acres to trees and 322,000 acres to grass

In the Thirties sheet erosion was widespread on the sloping uplands of the Coastal Plain.

—about half the needs in each category. Nearly 18,000 stabilization and sediment control dams were needed, and 84 percent are built. One-third of the 4,500 acres of eroding roadbanks are treated. For other needed practices, the percentages completed drop sharply. More than half of the total job remains after 19 years of work.

"Time, and lots of it, will be needed for steep banks to slough to a stable grade, and for vigorous vegetation to tie down the soil," says Mississippi State Conservationist W. L. Heard. "Then long-continued watch-care will be needed to prevent fire, overcutting of woodlands, overuse of pastures, and other hazards from destroying the protective cover. A very high degree of maintenance will be required." So goes the story of gully control work.

Not far away a less severe gully problem on Brackins Mill Creek watershed in Alabama has been solved by the use of diversions, drop structures, and other controls. But in the Southeast there remain many complexes of gullies for which treatment by individual landowners is not feasible and where watershed treatment cannot be economically justified under present standards.

Contrary to the prediction of a writer during the early days of the soil conservation movement, the land didn't "heal" when landowners drastically reduced the planting of corn and cotton on unprotected hillsides. Sheet erosion continues apace on much of the South's sloping cropland. On much of it adequate conservation measures have not been established, or have not been maintained.

A study reported in 1957 of 54 watersheds in Texas, ranging from 64 acres to 332 square miles in size, showed that sheet erosion was responsible for more than 90 percent of the total soil loss on 41, and more than half the loss on all but 4.

It caused 75 percent or more of the soil loss on 7 of 11 watersheds studied in Oklahoma.

In Mississippi, even with its acute problem of gully erosion, sheet erosion caused 50 to 75 percent of the soil loss in 5 of 19 watersheds studied, and 25 to 50 percent in 6.

The extent of sheet erosion in most of the South is between the ranges found in Texas and Mississippi.

Sediment source figures developed by the U. S. Study Commission, Southeast River Basins, show that the gross erosion in the 1,000-square-mile Blue Ridge province is 2,500 tons per square mile annually with 85 percent of it from sheet erosion. Small samplings on the Coastal Plain showed 1,200 tons of soil lost per square mile, with almost all of it due to sheet erosion.

Today improved pasture has replaced much of the clean-tilled crops and a thriving dairy and livestock industry has developed in the South.

Secondary roads are beginning to get the attention they need to prevent erosion. Here bermudagrass is being seeded on the shoulders.

The project work plan of the Big Slough watershed in Arkansas records that sheet erosion removes an average of 8 tons of soil per acre per year from the deep loess soils of Crowley's Ridge—enough to fill a train of 50-ton freight cars 42 miles long.

Sheet erosion from Blackland Prairie soils of the Donahoe Creek watershed in east central Texas amounts to about 11 tons per acre per year.

Two-thirds of the topsoil has washed from 41,000 acres of land in classes III to VII, and much sheet erosion has damaged 26,000 acres of class II land, in the South Fork of Broad River watershed in Georgia.

So the story goes as conservationists examine conditions today in specific watersheds and river basin studies. Such reports, of course, give attention to the more pressing problem areas, but they are realistic samples of the job remaining to be done.

Roadside problems

As farmers make progress in correcting land use and curbing erosion on agricultural land, new problems associated with the urban and industrial development of the South figure larger in the conservation job.

Erosion on newly constructed major highways, with their deep cuts and high fills on wide rights-of-way, is often as spectacular as gully erosion. For that reason, the public has demanded that erosion control be made a basic part of highway development.

First highway erosion control work in Mississippi was started on the Yazoo-Little Tallahatchie flood prevention project. Now the State Highway Department employs two agronomists to plan and promote such work. Plans and contracts for Federal and State highway construction throughout the South now generally include provisions for roadside stabilization.

On older highways and secondary roads, however, conservation has not been so widely adopted. But eroding roadsides are being classified as critical areas in watershed projects, and special attention is given to their treatment in project areas.

Georgia reports that 16,000 miles of its roadsides need stabilization. A study by the Agricultural Research Service there showed that as much as 359 tons of soil can erode from 1 acre of unprotected roadbanks in a year.

The Southeastern River Basin

(Continued on p. 68)

Sterile outwash from eroding uplands spreads over rich bottom land compounding the cost of land abuse.

Woodland Information Stick

Conservationists devise planning tool for ready answers in northeastern woods

By William J. Lloyd

Woodland Conservationist, Regional Technical Service Center, SCS, Upper Darby, Pa.

SOIL conservationists in the Midwestern and Northeastern States are using a new conservation planning tool—a "woodland information stick."

The idea of a woodland information stick is not new. Several years ago Homer C. Mitchell, SCS woodland conservationist in the Southern States (now retired), developed a southern pine information stick as a planning tool for use by the Soil Conservation Service. It found such wide acceptance that it is now available from commercial sources. In 1964, a comparable tool was developed for the same purpose for use in the Midwest and Northeast.

SCS woodland conservationists worked with foresters of the Central States Forest Experiment Station in adapting research data to practical field problems of rating stocking of woodlands in the region. Applicable simplified data were needed in a readily available form.

We developed the information stick through a series of "approximations," which were field-tested, then revised on the basis of experience. For the first model, we hand-drafted scales and tables on paper, which we glued to a stick and coated with varnish for protection from the weather.

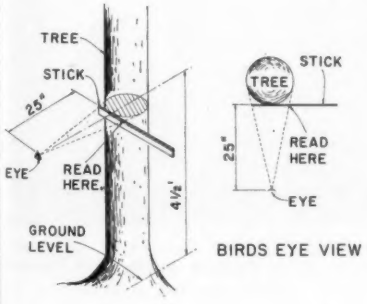
Finally, in June 1964 the fourth version was produced. This model was manufactured for the SCS by a commercial firm. All of the field woodland conservationists of the Cornbelt States, as well as many other people, helped in the developmental work. The two woodland conservationists who deserve most credit for this "cut and fit" stage are Robert E. Hartung, Columbia, Mo., and Robert E. Greenlaw, Madison, Wis.

The stick is made of maple, 25 inches long, 1¾ inches wide, and 5/16 inch thick. It carries printing on all four sides. In effect, it is a notebook on a stick, a compendium of useful information, combined with scales for measuring the heights and diameters of trees.

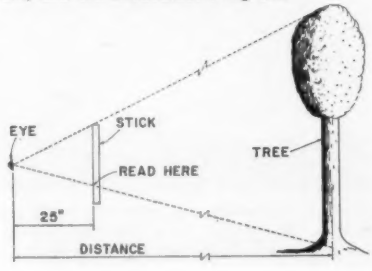
The stick does two kinds of jobs: (1) It furnishes ready answers to many of the questions that naturally arise when a soil conservationist is working in the woods with a landowner; and (2) it supplies information needed during the conservation planning process.

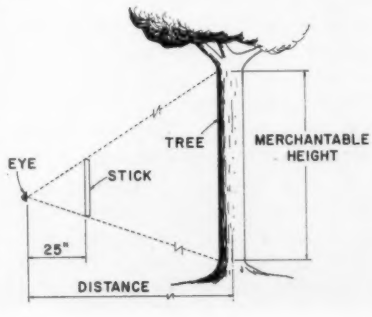
Although the soil conservationist usually does not have professional forestry training, with the information stick he has the answers to many common questions at his fingertips, literally and figuratively. Such questions as these can be answered quickly and accurately enough for general conservation planning purposes: How big is that tree? How tall is it? How many board feet in a tree like that? How tall will the trees in this plantation be in another 20 years? How many trees this size would make a cord of wood? How much heavier is hickory than white pine?

In the woods without the information stick and adequate training in its use, the average soil conservationist could have that sinking feeling—the kind that shows up when you are in a no-trump bridge contract and discover that



The woodland information stick is used to measure diameter of a tree (l.), its height (c.), and the merchantable log (r.).





you have a suit without a stopper.

We developed the woodland information stick primarily as a land use planning tool; not as a final guide to silvicultural plans. It is useful in assembling the basic information to help the landowner arrive at planning decisions.

For example, several of the crop-tending practices (thinning, weeding, intermediate cutting) are applicable only when there are more trees present than are needed to fully stock the area; that is, to use all the growing space. A procedure has been worked out for simple measurement of the stocking by the soil conservationist and the landowner working together.

The information stick carries stocking guides; it lists by diameter classes the trees needed to get best growth. This, then, is the measuring stick against which the findings can be evaluated. Since the landowner sees for himself what the stocking is, it is easier for him to understand more fully why certain practices are needed or could be used.

The woodland information stick is now in use in most of the Midwestern and in several of the Northeastern States. We plan to introduce it into the other Northeastern States next year. ♦

A town that's going to the birds . . .

Barrington Residents Beckon To Purple Martin Families

By William J. Melven and Elmer E. Offerman

Field Biologist and Work Unit Conservationist, SCS, Champaign and Lake Zurich, Ill.

BARRINGTON, Ill., is making a strong bid for recognition as the purple martin capital of North America.

Success achieved last year in attracting purple martins into northern Cook County suggests that Barrington residents may accomplish their goal easily.

Sparking the effort are two active conservation organizations—North Cook County Soil and Water Conservation District and the Barrington Conservation Council. Newspapers, radio, banks, grocery stores, all have participated.

And a Chicago daily newspaper carried an article on the purple martin program suggesting purchase of a martin house as a Christmas present for the man who has everything. In the following days the Barrington Conservation Council was surprised with a flood of telephone calls and letters requesting information. The Christmas campaign netted 125 sales.

The continuing promotion includes some unusual twists. One was a newspaper advertisement in the "Too Late to Classify" section of the Barrington Press:

> "New 12-unit multiple dwellings for sale. Erect on your property in 1 hour. Meets all zoning and building requirements for purple martin families. Years of enjoyment as return on investment. 12-unit apartment, $29.95, 14 ft. mount, $13.95."

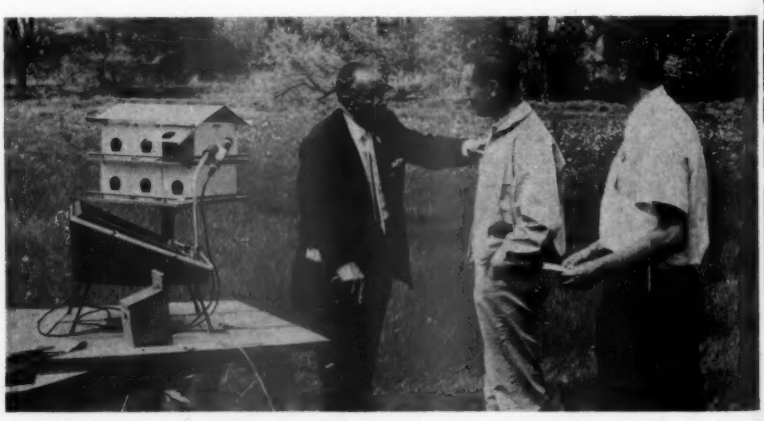
A field-day program featuring demonstrations and talks by conservationists attracted 150 people. One program participant, Dr. T. E. Musselman, author-lecturer on migratory wild birds, stressed benefits of having the martins. They are a natural means of insect control.

Cooperating in the campaign was a manufacturer of martin houses. The company entered an agreement permitting the conservation council to sell its products and use the profit for other conservation projects.

Barrington Mayor John Blanke accepted the first martin house from SWDC Directors Richard Krause and Frank Wollney. The house was erected on village property.

Krause said 80 houses were sold last year providing homes for more than 300 martin families. It was estimated there was 80 percent occupancy.

The purple martin campaign may be aimed at control of insects for the benefit of man, but an increase in the purple martin population indicates that the effort also is for the birds. ♦



Dr. T. E. Musselman (l.) presents purple martin house to Roland Eisenbeis of the Forest Preserve District of Cook County. Looking on is Frank Wollney, North Cook County Soil and Water Conservation District chairman.

"Blue Gold" Is New Harvest From New Hampshire Highland Woods

By David A. Bennett
Soil Conservation Aid, SCS, Rochester, N. H.

NEW HAMPSHIRE farmers, summer residents, and others are using usually unproductive, upland areas for raking in blueberry dollars.

The rapidly growing enterprise opens up a new, profitable use for rough, stony highlands so abundant in this part of New Hampshire.

In the past, unimproved land was suited only for woodland and wildlife uses. Now, blueberry harvests exceed 400 tons annually. Bulk sales bring between 12 and 19 cents a pound with top production at 2 tons an acre.

The lowbush blueberry plant is native to a large part of New Hampshire. For years it was undisturbed beneath a canopy of trees. Early settlers discovered that it could be stimulated into a profitable cash crop. Cutting trees and controlled burning of wild blueberry areas bring the sleeping plant to life. A season later, it swings into fruit production.

Scientific management keeps the soils of these areas in profitable use. Periodic pruning of old plants is important.

Soil conservation-minded Maurice Hayes of Milton, in southern New Hampshire, has developed a portable oil-fired burner to do his pruning job without loss of valuable ground litter. He has helped many growers build their own burning equipment.

Unlike wild fire, the oil burner gives complete control of the degree of burn. The hot fire sears off the old plants and leaves the organic layer intact. An acre of land can be pruned in 2 to 4 man-hours, using 50 to 60 gallons of oil. Conventional burning takes 8 to 10 man-hours an acre.

Irrigation is also being used by some growers to insure a bountiful and high quality harvest. Equipment costs are quickly recovered during droughty seasons. Many hillside ponds have been constructed to store water.

Harold Sanborn of New Durham feels that irrigation is a must, even during periods of normal rainfall. He finds the application of a small amount of water a few days before harvest can increase returns as much as 20 percent. Chemicals for insect and brush control also help growers produce a fruit superior to the era of "let's-get-a-pail-and-go-berrying." ♦

Maurice Hayes uses a high-pressure oil burner of his own design (above) to prune lowbush blueberries without destroying organic matter on the ground. A small amount of irrigation water applied just before harvest (below) increases the yield of blueberries. SCS Technician Richard Hebbard (l.) discusses a sprinkler system with Hayes.

Arkansas Youth Corps Aids Soil and Water Conservation

THE energy and enthusiasm of 235 young people gave soil and water conservation in Arkansas a boost for 12 weeks last summer.

They were enrolled in a Neighborhood Youth Corps Program sponsored by the Arkansas Soil and Water Conservation Commission. The conservation districts provided local leadership and employed the youths who helped plan and install conservation practices. The Soil Conservation Service provided job supervision, onsite training, and transportation.

District boards selected enrollees from applicants declared eligible for the program by the State Employment Security Division.

Enrollees were paid $1.25 an hour. The Office of Economic Opportunity assumed about 82 percent of the total expense of the program, and the districts 18 percent through supervision, supplies, equipment, and office space.

Youth Corps enrollees assist an SCS technician check out a farm pond.

Sterlin Hurley, president of the Arkansas Association of Soil and Water Conservation Districts, counsels with Neighborhood Youth Corps enrollees on banking procedures.

Jobs performed by the NYC enrollees included drafting maps and charts, updating records, helping maintain district-owned equipment and structures in watershed projects, assisting with field engineering and timber stand improvement, taking soil samples, and performing clerical duties.

Sixty-five districts participated in the program and district boards were highly pleased with the results, according to Sterlin Hurley, president of the Arkansas Association of Soil and Water Conservation Districts.

"The youngsters were quite helpful," William B. Davey, SCS

SCS work unit conservationist (l.) instructs Youth Corps member how to measure aerial photographs.

Youth Corps workers do timber stand improvement work on school-owned land near Prescott, Ark.

State conservationist, said. "We believe that the work experience planted some seeds that will grow future conservationists." ♦

1,100 Youths Hold Conservation Jobs

More than 1,000 youths in 15 States were employed in soil and water conservation work last summer under the Neighborhood Youth Corps Program. An additional 24 college students received work experience in fields associated with the informal educational pursuits through Work Study Programs in 4 States.

Most of the NYC youths were employed in Arkansas (235), Colorado (190), North Dakota (158), Minnesota (130), Nebraska (84), Missouri (59), and Oklahoma (48). The youths worked in more than 400 soil conservation districts.

The NYC conservation projects were sponsored by State Soil and Water Conservation Committees, State Departments of Conservation, the Farmers Union, and other organizations. These young people worked in soil conservation districts and were assigned to SCS technical personnel who provided training and supervision.

The college students enrolled in Work Study Programs included engineers, journalists, law students, soil scientists, and soil conservationists. They were employed in soil conservation district offices and on watershed parties. SCS technical personnel provided the supervision and guidance. ♦

Conservation District Gives On-Job Training for Students

By Elmer E. Jones

Work Unit Conservationist, SCS, Athens, Tenn.

A PROGRAM of on-the-job training is providing opportunities for McMinn County, Tenn., vocational agriculture students interested in conservation to develop needed skills before leaving high school.

The program was devised by school Principal B. E. Childers, now State director of Vocational Education for Tennessee, working with Rex Moses, chairman of the McMinn County Soil Conservation District; Boyd Trew, Vo-Ag instructor; employees of the Soil Conservation Service; and representatives of agriculture-related businesses and industries.

The new program gives senior vo-ag students an opportunity to work in agriculture-related jobs in the afternoon after attending school in the forenoon. The student receives school credit for his participation and such pay as the cooperating employer arranges.

The McMinn District is one of the cooperating employers. It entered into an agreement with the county school authorities to coordinate the student's training activities. The district also entered into an agreement with the SCS under which SCS gives the student guidance as he gains experience in the district's work.

Kelly Shepherd, Jr., now a student at Tennessee Wesleyan College, Athens, was the first high school conservation trainee. Chairman Moses of the conservation district secured funds from the McMinn County Council (county governing body) to pay him 75 cents an hour for his training work.

Shepherd learned how to use and care for survey rods and dumpy levels; to keep survey field notes; to lay out and check construction of ponds, terraces, diversions, and drainage ditches; to read and interpret aerial photographs; to interpret soil maps; and to ink and draft farm conservation plan maps. He was instructed in eradicating rough fish from farm ponds, in woodland improvement, tree planting, and taking soil samples.

By the end of 1964, two other students had indicated interest in soil and water conservation job training. Ronald G. Price was selected as the trainee for 1964-65.

Funds to continue the program have been provided in the McMinn County budget. ♦

Roy R. Dennis, soil conservation technician, gives Ronald G. Price a little help with his field notes.

King Cotton's children . . .

Pines, Pastures, and Ponds Bring New Economic Life

By John M. Cross
Assistant to State Conservationist, SCS, Alexandria, La.

SOMEBODY told people in Webster Parish, La., that their economy was no longer based on agriculture, and many believed it.

Except, of course, the people who knew better.

Even a private research concern, which had made a study, so reported. But Don Hinton, chairman of the Board of Supervisors of the Dorcheat Soil and Water Conservation District, just couldn't buy it. And he has proved his point.

He asked Fermont Hofmeister, SCS work unit conservationist; James K. Gladney, county agent; and Miss Kate Crownover, ASCS county office manager, to get some facts and figures together. In just a few hours they surprised even themselves with what they found.

This was the birthplace of conservation in Louisiana. In the days of the old Brushy-Cooley Demonstration Project there were 37,310 acres of cotton in the parish. In 1964, there were 2,210 acres.

What do you do when 35,000 acres of cotton disappear from a community? Where are the people who grew, harvested, and processed the crop? How do you replace the income that cotton brought in? Hofmeister and his fellow workers can tell you.

There wasn't enough beef sold in Webster Parish in 1934 to be reported. In 1960, the income from beef was $400,000. In 1963, it was $920,000. That's what happened to part of the cotton land—it went back to grass.

Because of the depletion of the land, yields of cotton were so low and profit so little that change was imminent. Since the Dorcheat dis-

Cotton, crabgrass, and calamity had made scenes like this all too common in Webster Parish 30 years ago.

Trees are a multi-million dollar industry in Webster Parish today, thanks to the district's tree-planting program.

Milk is harvested twice a day from grasslands under conservation treatment in Webster Parish.

trict was chartered in 1938 the change has been steady but firm. What started out to be an emergency measure to stop erosion has become a major source of income.

In 1934, there were no packing plants in the area. Now there are 3. They employ 165 people and do a $6½ million business each year. These 165 people own homes, support their churches, trade at the neighborhood groceries, and pay taxes. The money they spend keeps moving in the economy.

A large paper mill employs 1,950 people. It eats up 2,200 cords of pulpwood a day. If you go out where they are harvesting the wood, you'll find some more of that lost cotton land. Trees planted by CCC boys in the Thirties now are being harvested to make the bags that today's workers take their groceries home in.

There is a good chance that some of the trees were planted with a planter owned and operated by the conservation district, and the planter was probably manufactured in Minden, county seat of Webster Parish. A local farm machinery manufacturer got into the business when tree planting was at its peak and is still making rotary mowers, hay rakes, and mulch tillage implements. Two such plants sell $4¼ million worth of these tools each year, made by 145 local people who send their children to school, buy drugs downtown, go to the movies occasionally, and support local businesses in a lot of other ways. Are they not "based on agriculture?"

The largest of 4 lumber mills in Webster Parish hires 292 local peo-

Beef has replaced cotton on part of the 35,000 acres shifted out of row crops in the conservation program.

ple, and last year sold 30 million board feet of lumber for nearly $3 million. In addition, it sold a quarter million dollars worth of chips, pulpwood, and charcoal wood. The owners are staunch supporters of the conservation program for a very good reason—it puts bread and butter on the table for them and their employees. And the people who work at the mills go to the doctor when they need to, hire a lawyer if they need one, and build houses with their own product on lots bought from a realtor.

Don Hinton sells milk to a processing plant in Minden. Last year he and his neighbors sold a half million dollars worth. The plant employs 56 people who process and deliver the product of the land every day. And these 56 people buy gasoline and tires, clothes and shoes—must we keep repeating?

It's all agribusiness

Hofmeister and company found out that of the total money paid in wages to citizens of Webster Parish in 1964, nearly half of it, 44½ percent, went to people who harvest, process, or sell the fruits of conservation farming! Add that to the income of farmers growing the product, plus the amount of business enjoyed by retailers and others that is traceable to agribusiness, and you find, as Don Hinton did that the economy of the parish is based *directly* on agriculture.

When the pattern of land use changed from cotton, crabgrass, and calamity to pines, pastures, and ponds, these people slowed down only long enough to shift into a higher gear. Farm population decreased 43 percent during the transition, but total population increased 6 percent.

People left the land, perhaps, but they just moved a few miles away into town. Now they harvest their crops with an axe, a power saw, a mowing machine, or just let their livestock do it for them. They have a recipe for rural economic development based on the soundest foundation in the world—the conservation and development of natural resources.

Hinton and his helpers are spreading the story. They have put together a slide-illustrated program using local photos of people well known in the parish. It has been presented to civic clubs, and there is a waiting list of organizations that have asked for it. The district supervisors have published a four-fold brochure telling the story in pictures. They talk to people where their hearing is best—through the pocketbook—and tell them that the economy of their area *is* based on agriculture. ♦

Cathedral Pines Recreation Area Is Memorial to Joint Action

By Manley H. Bailey
Work Unit Conservationist, SCS, Farmington, Maine

(Picture on p. 72)

THE joint efforts of many people and organizations are responsible for the success of the Cathedral Pines recreation area near Stratton, Maine.

The 300-acre area covered with Norway pines ranging from 50 to 100 feet high borders Flagstaff Lake, only a 3-hour drive from the City of Portland.

In 1963, the Stratton-Eustis Development Corporation was formed as a nonprofit organization to improve the economy of the Stratton area. As cooperators with the Franklin County Soil Conservation District, the corporation had the use of a soil survey and other technical assistance of the Soil Conservation Service in planning the stately stand of Norway pines as a peaceful spot for vacationists.

The proposal called for the development of 80 tenting sites, 20 travel trailer accommodations, and necessary facilities for a destination-type camp ground. Day picnicking will continue to be available to local people.

Financial assistance for the recreational development was provided by the Farmers Home Administration. Other State and local agencies contributed also to the development of the plan.

The corporation is well on the way in establishing its plan. Besides the campsites, the vacationist will find a bathing beach, fishing water, a playground, and recreational hall. Nature trails are being established leading to a natural wildlife marsh where beaver activity can be seen.

The area has been in semipublic and public ownership for more than a century and a half. It was part of an 1807 grant by the Commonwealth of Massachusetts to the Trustees of Bath Academy. Ownership became vested in the town of Eustis in 1871, after which the area was commonly known as the "public lots."

About the turn of the century, Agnes Meader and Kate Ricker built a small camp and lunch room at Cold Spring, adjacent to the public lots. They are credited with having first named the area "Cathedral Pines."

The site is on the route of Benedict Arnold's ill-fated expedition to Quebec in 1775. With a greatly diminished band of men, he reached the area on October 19. A week later, after having lost several boat loads of provisions in the North Branch of the Dead River, the expedition started down the Chandiere River to Quebec.

Today, the strife and misery of 1775 are replaced by peace and contentment. The tourist and camper approach the towering Norway pines with the feeling that "This is a place for us to forget the noise of the city—a good place to get away from it all! ♦

Texas Community Gets Economic Lift From Pole Processing Plant

By Ted H. Elders
Work Unit Conservationist, SCS, Linden, Tex.

A POLE and timber processing plant at Linden, Tex., has brought economic benefit to the whole Marion-Cass Soil Conservation District, and especially to tree farmers.

Sixteen people have full time employment at the plant. More than double that number are busy cutting and hauling timber from the woods.

Landowners are making a profit from trees on land that failed to pay with corn, cotton, and "taters."

Posts are available for fences in the expanding improved pasture the market for timber, a source of program now under way. Besides building materials is readily available for landowners, business, and industry.

Source of raw materials

The timber treating plant is the brainchild of N. L. Evans who saw development of tree plantations in east Texas as an unending source of raw materials for such an enterprise.

The tree plantations were the outgrowth of a conservation needs survey undertaken by the Marion-Cass District Board of Supervisors in 1948. They found there were 250,000 acres of land in the district too steep and eroded for anything but trees.

Located in the rolling, sandy hill country where Louisiana, Arkansas and Texas join, the area is noted for its many lakes and fine fishing.

Years ago many of the hills were denuded to make way for cotton, corn, and potatoes. At one time there were over 40,000 acres of cotton in the district. Continued row cropping and heavy rains led to abandonment of many fields long before the district was organized in 1943.

A job of restoration

It was observed by Dr. Joe D. Nichols, one of the newly elected supervisors, that there was a job of restoration in the district rather than preservation, for there was little left to preserve.

After the survey was completed, Federal and State agencies, industrial and business concerns, civic clubs and individuals were asked to assist the district with their plans.

A tree-planting program was decided upon and everyone set out to sell pine trees. The first year 400,000 trees were planted. In 1958-59, more than 11 million trees were sold and planted.

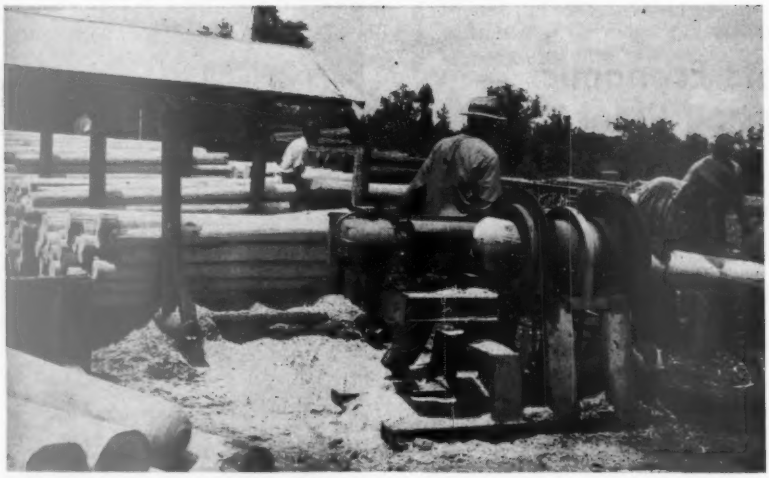
Plantations of different sizes and ages were scattered throughout the district, and by 1961 the earliest ones were ready to thin.

It was at this point that Evans made his move. Since most of the people in the district were practicing conservation and thinning their timber selectively, a treating plant could be assured of raw products year after year.

A modern plant

Evans decided to build a plant modern in every way that could fill orders to meet the most strict specifications. It has been in operation since 1962 and treats about 1 million board feet of lumber and

Between 1958-59 about 11 million pine trees (above) were planted on different size plantations in the district. By 1961 the first planted plantations were ready to thin (below). Cuttings were used for poles and posts.



Employment is up in the district with 16 in-plant workers and twice as many busy at cutting and hauling timber from the woods.

more than 200,000 cubic feet of posts and poles a year.

Products have been shipped to Nebraska, Kansas, Arkansas, Louisiana, Indiana, Iowa, Missouri, Oklahoma, and Texas.

Since Evans first began operation of the plant the area around Linden has been revitalized, both physically and economically. ♦

SCS and BLM Join In Land Planning

BETTER coordination of resource conservation and land development on intermingled public and private lands in Western areas will be the result of a recent agreement between the U. S. Department of Agriculture and the U. S. Department of the Interior.

In the Western States the Bureau of Land Management usually manages the Federal land, while the Soil Conservation Service works with private landowners through soil conservation districts.

Under the agreement, BLM and SCS will combine their methods and techniques and work more closely with local soil conservation districts where public and private lands are intermingled. Areas where these lands are dependent upon one another, as in upper and lower portions of a watershed, will also be affected.

State-level BLM, SCS, and conservation district officials will decide annually which areas will receive special planning during the year. Local officials of the three groups will then develop detailed work plans on a closely coordinated basis.

"The real significance of this agreement," Donald A. Williams, administrator of SCS, and Charles H. Stoddard, director of BLM, said in a joint statement, "is that it will set up step-by-step actions to get broad resource development really going on these mingled public-private lands." ♦

SCS Has Chapter in Legislation Reference

"A major Federal resource objective in the postwar era was to protect and enhance the Nation's soil and water resources by means of soil conservation measures."

So begins the chapter on Soil Conservation and Small Watersheds, dealing with the Soil Conservation Service, in *Congress And The Nation,* an 1,800-page reference work on government and politics from 1945 to 1964.

Published by Congressional Quarterly Inc., the single volume contains summaries of all major legislation during the 20-year postwar period, including a chronology of legislative action affecting SCS and other conservation agencies and summaries of various SCS and other programs.

The book is mostly for the use of reporters, editorial writers, political scientists, and politicians. ♦

New Research Center For Northern Plains

The Northern Plains Soil and Water Research Center, recently established at Sidney, Mont., will directly serve a 70-million-acre area, primarily in Montana but also extending into Wyoming and the western Dakotas. Specific investigations will be planned to meet the most pressing needs for controlling wind erosion and conserving soil moisture in the area.

The Agricultural Research Service will operate the center, in cooperation with the Montana Agricultural Experiment Station, the Montana soil and water conservation districts, and the Soil Conservation Service. ♦

Appalachia Plant Center Located

The Appalachian Regional Development Program will gain an assist from a plant materials center to be built by the Soil Conservation Service at Quicksand, Ky.

Better plant cover is needed on the steep, shallow, acid soils and those left bare by mining operations throughout the Appalachian region. At the center and on nearby farms, SCS specialists will evaluate a wide variety of plants that can be used to prevent erosion and restore these lands to productive use for pasture, woodland, wildlife, or recreation. ♦

New Grassland in Idaho

Livestock now graze where growers once struggled with wasting soil

Dawson Gaertner, another cooperator, in seed plot of pubsecent wheatgrass, Midvale area, Weiser River Soil Conservation District.

"NOTHING else the Government has done has profited the country in this way," says W. Clay Sutton, Midvale rancher.

Sutton is first secretary of the Weiser River Soil Conservation District in west central Idaho.

As he spoke, he swept a hand across the horizon, indicating what he meant by "this."

The valleys and hills in Washington County, Idaho, which make up the landscape, abound now in acres and acres of grassland—hip deep and truckhood high before grazing.

Diversified operation

Diversified livestock-hay-pasture operations are yielding good returns on once abandoned wheatland and overgrazed or burned-over rangeland. Grain acreages are smaller.

"I was a wheat grower when I came here in 1919—that was what I knew," Sutton recalls. "In those days if you were a wheat grower you tried to grow wheat—not what was best to grow in the soil and climate."

Result: Many a farmer went broke trying.

Before the district was formed in 1940, there were 462,754 acres of private land—about 49 percent of the total in the county. This included 60,000 acres of nonirrigated, 21,000 acres of irrigated agricultural land, and 347,025 acres of grazing land.

Soils were susceptible to erosion because of texture, slope, and vegetative cover—or lack of it. Sheet erosion occurred because of improper use of critical slopes. Wild fires, overgrazing, and destruction of good perennials caused erosion on rangelands.

Thus did the first district supervisors appraise the situation as they took a hard look at the future of their country.

Goal and program

The goal: Balanced economic units with grassland and alfalfa hay or pasture, livestock, some grain in rotation, and smaller acreages of cash crops.

The program: Seed adapted legume-grass mixtures for hay and pasture. Regulated grazing on permanent hay and pasture and rangeland. Seed supplemental annual pastures. Trees, shrubs, and vines planted for posts and fuel, and for farm and feedlot shelter-

Fat cattle on first year grazing for intermediate wheatgrass and alfalfa please District Cooperator Bob Stout of Mann's Creek. The land was formerly in wheat production.

belts; channel bank stabilization; erosion control; and wildlife food and cover.

Irrigation systems were adapted to soils, slopes, and crops, and application and use of water controlled.

Although only a handful of the more than 700 farm operators were in on the SCD program at the start, those few provided the demonstration of how effective and profitable grass and livestock in combination can be.

District and the Soil Conservation Service quickly had support and help from the county agent and from the Weiser Chamber of Commerce in spreading the word. An annual Soil Conservation Day was launched with backing of the Chamber of Commerce and the county agent.

It was conversion of people as well as land. According to Milton W. Branch, chairman of the Idaho State Soil Conservation Commission and former Weiser River SCD supervisor, "Without grass we would have starved out." ♦

SCS Design Helps Irrigation Company Salvage Tunnel

WITH the help of the Dolores Soil Conservation District and some unusual engineering, the Montezuma Valley Irrigation Company in southwest Colorado has licked the troublesome problem of a decaying 76-year old irrigation tunnel.

Built in 1889, the 5,300 foot diversion tunnel brings life-giving water from the Dolores River to irrigate the Montezuma Valley, where more than 35,000 acres of land is devoted to small grain, hay and irrigated pasture. It also serves the domestic and industrial interests of the City of Cortez with its population of 7,500.

The original tunnel was drilled through formations of sandstone, limestone, shale, and coal. By 1950 its condition was beginning to pose a threat of disaster. Little maintenance work had been done through the years and the lower end of the tunnel was eroded badly. Yearly repair and cleaning became a necessity.

Things got critical when the work became extremely hazardous for the maintenance crews. There was also the maintenance cost, which by 1960 was exceeding $2,000 a year.

On request of the Montezuma Valley Irrigation Company an investigation was made by Soil Conservation Service engineers assisting the Dolores Soil Conservation District. It revealed that the tunnel was rapidly deteriorating, with water-gouged holes on the floor and eroded roof sections as high as 30 feet. It was discovered also that the tunnel was neither straight nor on uniform grade, a complicating factor in planning repair work.

This view of the outlet end of the tunnel shows ¼ head of water flowing through the straightened and repaired tunnel from the Dolores River.

Initially the SCS designed a tunnel liner with concrete floor and curb with a corrugated steel metal arch liner plate overhead. The estimated cost of this type of installation was $100 a foot. After further checking, officials of the irrigation company determined that uranium mines in the vicinity were using H-beam arches to support 4 x 6-inch timbers for tunnel lining, and this type of installation could be made for less than half the cost of the metal arch liner.

SCS engineers approved this type of construction and the irrigation company installed the liner in 1,060 feet of the downstream end of the tunnel at a cost of $38,000. The tunnel was in continual use during the 1964 irrigation season.—HAROLD W. BRADFORD, *Work Unit Conservationist, SCS, Cortez, Colo.* ♦

Many Districts Have Forestry Agreements

More than two-thirds (1,999) of the Nation's soil and water conservation districts were operating last year under memorandums of understanding with State forestry agencies, and almost half (1,371) had verbal agreements with State foresters.

Also last year, 238 districts had formal agreements for mutual cooperation with units of the national forest system administered by the U. S. Forest Service; and 737 national forest units had informal working agreements. Department of the Interior agencies had 122 agreements with districts, with dozens more pending.

These agreements are designed to encourage cooperation in good land management or to aid the districts on forest product marketing problems. ♦

The United States is the world's largest exporter of agricultural commodities, and also one of the world's largest importers of farm products.

Better Management Improves Colorado Highland Meadows

The Spanish Peaks of Huerfano County, Colo., look down on stacks of hay harvested on a section of the county's 35,000 acres of irrigated and improved land.

ON 700,000 acres of mountain meadows, 2,500 Colorado ranchers winter-feed half a million sheep and cattle.

These meadows are usually parklike areas at elevations of 6,500 feet to more than 9,000 feet, surrounded by higher and often rugged terrain.

A general shortage of irrigation water in recent years has influenced stockmen in the region to practice better water management. Many stockmen have installed water-measuring and water-control structures.

Pete Engle, SCS work unit conservationist at Gunnison, estimates that three-fourths of the meadows in his area have had the benefit of improved water management through the influence of soil conservation district efforts.

Meadow improvement through renovation, leveling, and reseeding continues to increase, although this usually does not involve large acreages. Soil Conservation Service specialists say that hayland management is inclining toward smaller acreages of high-quality, higher-yielding meadows, making it possible for operators to make more efficient use of irrigation water.

In seeding pastures, brome and alfalfa, timothy and alsike clover are the popular mixtures. Intermediate wheatgrass, alta fescue for normal meadows, creeping meadow foxtail and reed canarygrass for wetlands, and tall wheatgrass and alta fescue for salty lands are used in some of the new seedings.

Well over half of the hay yield is being baled now, according to estimates. All kinds of new and improved equipment are being used in the mountain fields—swathers, balers, bale gatherers, and bale stackers. The loose hay stacks have all but vanished. The large hay crews are seldom seen.

All of these changes promise a bright, new era in Colorado's mountain areas, made possible through more efficient resource use and management. —JIM BRUNER, *Conservation Agronomist, SCS, Denver, Colo.* ♦

USDA Notes October As Cooperative Month

Observance of October as "Cooperative Month" will begin with a 5-day program of activities sponsored by the Department of Agriculture Monday, October 4 to 8, in Washington, D. C.

Seminars and movies will emphasize the role of cooperatives in providing high quality consumer goods and services; job opportunities, credit, supply, and technical services for farmers; community leadership; electric power and telephone systems in small towns and rural areas; and a strong foundation for the free enterprise system. ♦

Erosion

(Continued from p. 54)

Study Commission pointed out serious roadside erosion on 27,000 miles of roads, a little more than 20 percent of county, State, and Federal highways in the area, which covers part of Georgia, Alabama, Florida, South Carolina, and North Carolina. "Soil loss is estimated at 3.6 million tons, an average of 133 tons per mile annually," the report said.

In Alabama, the Tombigbee River Basin Study points out the need for erosion control on 4,170 miles of roadbanks.

Every watershed project plan and river basin study recognizes eroding roadsides as sources of sediment and fast runoff, and proposes treatment. And gradually, road authorities at all levels are recognizing the need for treatment in the interest of good road maintenance, traffic safety, and beautification.

Urban building sites

Control of erosion in the South's rapidly growing urban areas is a problem of concern to the urban planner and the conservationist, the farmer and the suburbanite, the health officer and soil scientist, local governments and garden clubs, and to State and Federal agencies.

The Conservation Needs Inventory indicates that 4.6 million acres will go out of agriculture to urban and built-up areas in the South and Southeast by 1975. This foretells an expansion of 28 percent in the urban area of 1958.

Planning and zoning boards, conservationists, and leaders from community to National levels are groping for ways to meet their various objectives without penalizing the interests of developers and home buyers.

The control of erosion of building sites is one of the vexing conservation problems of the day.

Soil torn from the land by gully and sheet erosion or washed from construction and urban sites doesn't just disappear; often it would be better if it did.

The floor of an early day bridge was found 7 feet below the surface by a contractor digging a core trench for a flood detention dam on Rooty Creek watershed in Georgia. Once an adequate stream channel ran below the floor.

Sources of Sediment

The sources of sediment can sometimes be pinpointed. Creeks feeding directly from the bluff hills of Mississippi onto the Yazoo delta bring 7,700 acre-feet of sediment a year. Twenty percent is silt from sheet erosion on fields, nearly 40 percent is sand from deep-cut gullies and roadbanks, and the remainder is fine material from streambank erosion.

Sediment has damaged 15 percent of the 9,200-acre flood plain of the Upper Bayou watershed in Oklahoma. The stream discharges 350,000 cubic yards of sediment from its mouth each year, and 85 percent reaches Lake Texoma. The watershed project now under way is planned to protect 1,100 acres of flood damaged land and reduce the flow of mud to Lake Texoma by more than 200,000 cubic yards annually.

Stewarts-Lovills Creeks watershed on the Virginia-North Carolina boundary line is small but is representative of many in the Blue Ridge-Piedmont area. Nearly one-tenth of its 2,800-acre flood plain is damaged annually by sediment deposition, and another 80,000 tons of sediment reaches the mouth of the watershed each year. Land treatment and watershed structures will reduce land damage to a negligible amount and hold back 65,500 tons of soil now lost from the watershed.

The Mobile County, Ala., Soil Conservation District newsletter reported that a dredge pumped 50,000 cubic yards of sediment each day for 202 days from the Mobile River channel to maintain harbor traffic.

And these are *continuing* depositions—not soil from a long-ago period when people neglected the land. Obviously, the South still has an unfinished job of erosion control of major proportions. The impressive accomplishments to date are, as Conservationist Martin said, "just the beginning of a Herculean task." ♦

Non-Federal Aid To Conservation

Non-Federal contributions to the design and layout of conservation practices in 1965 added the equivalent of 3,615 man-years of technical services to those provided by the Soil Conservation Service.

The contributed personal services are valued at more than $25 million. The estimate is based on what it would have cost SCS in additional staff to do the same work.

The non-Federal input to establishment of conservation measures increased approximately 50 percent from 1960 to 1965. The corresponding contribution 5 years ago was 2,357 man-years.

Individual land owners and operators made the largest contribution, 1,723 man-years or approximately half the total. Much of this time was spent directly helping SCS technicians make preliminary engineering surveys, determine need and practicability, stake and layout practices, check practice performance, and similar operations.

Other groups making substantial contributions were private contractors and commercial institutions, 1,052 man-years; State governments, 306; district managers and field assistants, 242; and local governments, 181. ♦

The lifetime quota of water usage for the average person in the U. S. is 3,500,000 gallons.

Recreation More Than Doubles Massachusetts Town's Population

FIFTEEN hundred families, comprising about 7,500 people, with all kinds of tents and trailers, camped on 150 acres of former cropland and more than doubled the population of the town of Belchertown, Mass., for 3 days in May this year. People seeking outdoor recreation caused this burst in population.

The New England Family Campers Association held its annual safari at the Robin Farm of Henry Renouf. The association scheduled many events in addition to its annual meeting. Horseshoe pitching, square dancing, swimming, and fishing were some of them. This is the second year that this event has taken place at this camping area.

Robin Farm is owned and operated by Henry Renouf, a longtime cooperator and district supervisor of the Hampshire Conservation District. Renouf, a former dairy and poultry farmer, in 1962 converted 90 acres to recreation. He built a lodge and improved 90 campsites. This area soon grew to double this size, and last year he converted the whole 1,000 acres of his farm to recreation.

In 1963, the farm was put under the Cropland Conversion Program, all farming stopped, and the owner devoted his entire time to his recreational enterprise. Since that time, Renouf has installed several small ponds, leveled an area for a baseball field, built an 80-by-50-foot pavilion for dancing, constructed a country store, installed many feet of sewer and water lines, and improved woodlands for campsites. Future plans call for nature walks, wildlife plantings, more ponds—including one of 28 acres—and an enlargement of the camping area.

Facilities at Robin Farm offer the camper real outdoor living in pleasant country surroundings.—VERNON E. JOHNSON, *Work Unit Conservationist, SCS, Northampton, Mass.* ♦

Field once in alfalfa supports a crop of campers as the New England Family Campers Association gathers for its annual safari.

Timber Trends in the United States. BY U. S. FOREST SERVICE. *1965. USDA Forest Resource Rpt. 17. 235 pp., illus., charts, maps. $1.75.*

This is the current appraisal, as of 1962, of the Nation's timber resources. It also provides a look by the U. S. Forest Service into the Nation's future timber demands.

This report does not present a national forestry program as such. It does provide much of the data needed as a basis for forestry programs at national and local levels. State associations of soil conservation districts and individual districts could well use the information in updating their programs. If more local details are needed, they likely can be provided by the forest and range experiment stations that contributed to this national summary.

A notable difference between this appraisal and the 1952 Timber Resources Review is the inclusion of an estimate of the potential productivity of our forest land in terms of cubic feet of growth per acre. This beginning effort to estimate the inherent capacity of the land to grow commercial wood should be nurtured into full bloom to give us clear-cut ways of designating the woodland suitabilities of our land. When this can be done, the inventory and appraisal of our forest resources will be indispensable guides in making important land use decisions—T. B. PLAIR, *Woodland Conservationist, SCS, Washington, D. C.*

Soils: An Introduction to Soils and Plant Growth. BY ROY L. DONAHUE. *1965. 2d ed. Prentice-Hall, Englewood Cliffs, N. J. 364 pp., illus. $10.60.*

In this book Dr. Donahue has explained many of the basic prin-

ciples of soil science and their application with a minimum of difficult scientific language. It can be highly useful to students and to other readers lacking college mathematics, chemistry, geology, or botany. The book has good illustrations, a glossary, and references for further study. Well balanced books on soil science for readers having little previous experience in science are so rare that this one should be much appreciated.—CHARLES E. KELLOGG, *Deputy Administrator for Soil Survey.*

Trail Planning and Layout. BY BYRON L. ASHBAUGH. *1965. National Audubon Society, New York, 104 pp., illus. $2.50 (25 percent off in lots of 10 or more.)*

This is a guidebook of practical information on outdoor trail planning, specifications, and designs. Many aspects of using the outdoors for conservation education and recreation are covered. An 8-section appendix provides pertinent information about trail signs, leaflets, sources of related publications, and sources of assistance from agencies and organizations. The book will be a useful guide for planners of nature centers, outdoor classrooms and laboratories, camps, and recreation areas.—ADRIAN C. FOX, *Information Division, SCS, Washington, D. C.*

New Publications

Decomposition of Wood and Bark Sawdusts in Soil, Nitrogen Requirements, and Effects on Plants. BY FRANKLIN E. ALLISION. *1965. USDA Tech. Bul. 1332. 58 pp., illus. 25c.* Reports of extensive studies of the rates of decomposition in soils of the woods and barks of 28 species of trees, the quantities of nitrogen required for their decomposition, and their effects on germination and early growth of garden peas.

Predicting Rainfall-Erosion Losses from Cropland East of The Rocky Mountains. BY WALTER H. WISCHMEIER AND DWIGHT D. SMITH. *1965. USDA Agr. Hbk. 282. 47 pp., maps, charts. 30c.* This handbook presents data and procedures for extending the use of the soil-loss equation from the area of its origin, the Corn Belt, to the entire eastern and middle United States. It describes the evolution of the equation, explains the factors involved, and tells how to make application to varying local conditions.

Design of Roadside Drainage Channels. BY JAMES K. SEARCY. *1965. U. S. Department of Commerce, Bureau of Public Roads, Hydraulic Design Series 4. 56 pp., illus., charts, tables. 40c.* A revision of a previous publication of the same title. Contains technical information on (1) estimating storm runoff from small areas, (2) hydraulics of drainage channels, (3) design procedure, (4) construction, (5) maintenance, and (6) economics of drainage channels.

Background on U. S. Agriculture. *1965. USDA Leaflet 491, rev. (8 pp. foldout).* An updated collection of simple basic statistics about agriculture and agribusiness. Examples: One farmworker produces food, fiber, and other farm commodities for himself and 32 others. Three out of every 10 jobs in private employment are related to agriculture. Every USDA employee should have a copy handy.

Grass Varieties in the United States. BY A. A. HANSON. *1965. USDA Agr. Hbk. 170, rev. 102 pp. 50c.* This handbook identifies and describes varieties and experimental strains of grasses that have been widely distributed for testing purposes. For each, it tells where the original selection was made, the source, and current status of distribution.

Pollution-Caused Fish Kills in 1964. *1965. U. S. Dept. Health, Education, and Welfare, Public Health Service Publ. 847 (rev.). 28 pp.* Statistics on fish kills reported to the Public Health Service, with some excerpts from field reports. The data are significant as an indication of the severity of water pollution problems.

An Agricultural Processing Plant in Your Community? *1965. USDA Agr. Inf. Bul. 298. 11 pp.* Factors to be considered in planning and operating an agricultural processing plant. Prepared by Agricultural Research Service as an aid to rural areas development.

Duck Stamp Data. *1964. U. S. Dept. of Int., Fish and Wildlife Service Circ. 111, rev. 40 pp., illus. 25c.* Information for collectors, including reproductions of the stamps issued to date, and a report on how the resulting funds have been used.

National Forest Wilderness and Primitive Areas. *1965. USDA, Forest Service. 12 page foldout, map.* Gives location and size of wilderness areas (units of the National Wilderness Preservation System) and primitive areas on the National Forests.

A Primer on Water Quality. BY H. A. SWENSON AND H. L. BALDWIN. *1965. U. S. Dept. of Int., Geol. Surv. Unnumbered. 27 pp.* A basic explanation of properties of water and factors that influence its quality.

Ornamental Hedges for the Northern Great Plains. BY W. P. BAIRD. *Rev. 1965. USDA Farmers Bulletin 2105. 34 pp., illus.* Recommended species and planting methods for beauty and protection.

Community Improvement Through Beautification. BY FEDERAL EXTENSION SERVICE. *1965. USDA PA-660. 6 pp.* Some simple suggestions, simply stated, for community action.

Facts about Resource Conservation and Development Projects. BY SOIL CONSERVATION SERVICE. *1965. USDA, SCS-CI-14. 4 pp.* What they are and how to start one.

Water Witching. *1965. U. S. Dept. of Int., Geol. Surv. Unnumbered. 14 pp.* An official appraisal of dowsing and some references on finding ground water.

Conifer Nursery Practice in the Prairie-Plains. BY J. H. STOECKELER AND P. E. SLABAUGH. *1965. USDA Agr. Hbk. 279. 93 pp., illus. 50c.*

Changes in Farm Production and Efficiency. *1965. USDA Statistical Bul. 233, rev. 37 pp.* A summary report, revised to July 1965.

Soil Survey

Lovelock Area, Nevada. BY L. N. LANGAN, E. COLE, AND R. MAYHUGH. *1965. 87 pp., illus.; maps 3.17 inches to the mile (1:20,000).*

Franklin County, Alabama. BY HOYT SHERARD, R. A. YOUNG, J. P. BRYANT, SAM J. SMITH, AND JAMES A. GIBBS. *1965. 80 pp., illus.; maps 4 inches (1:15,840).*

Wabasha County, Minnesota. BY G. F. HARMS. *1965. 131 pp., illus.; maps 3.17 inches (1:20,000).* Field survey by L. E. Bullard, G. F. Sickler, D. A. Cowles, and G. A. Poch.

From the Administrator:

Lessons in Community Action

TEN Resource Conservation and Development projects are in the operations stage. Very soon we expect to begin providing planning assistance to at least eight additional RC&D projects.

In our close-working association with soil and water conservation districts since 1937 we have learned to appreciate and to depend on local leadership, local planning, local action, and local coordination of programs.

This appreciation of and dependance on local initiative was accentuated when we began assisting in Public Law 566 watershed projects in 1954.

Watershed projects extend the original district concept. They embrace a wider circle of community activity. They bring urban communities and nonfarm groups into the resource development picture to a much greater extent than previous district-sponsored activities. They add dams for flood prevention and water storage for multiple-purposes to the going program of conservation planning and treatment of privately owned farm and ranch lands. They offer complete watershed development to protect country and town alike from floods and to provide water supply for all uses including recreational developments.

Resource Conservation and Development projects are a natural outgrowth of district and watershed programs. They embrace these two activities, for RC&D projects are based on full development of natural resources and promotion of the use of such developments for the economic betterment of all the people.

They are rural development in a more complete way than soil and water conservation programs in districts and watershed projects will ever be, for they go beyond the act of conservation; they build upon conservation under a long-range plan aimed at improving the economy of the area.

Young as the RC&D approach to our total job is, we have learned much from it, and we expect to learn a great deal more as planning and action move forward. Here are some of the lessons in community action we have learned from RC&D projects:

(1) People who live in RC&D project areas can and will enthusiastically accept responsibilities for developing and carrying out resource plans for community development. There is little limit to what a community can do once its mind is made up.

(2) Local people have to be convinced that public agencies and conservationists and other professionals *want* them to plan and that progress depends on their determination to help themselves.

(3) The role of public agency employees is to advise, stimulate, provide technical information, explore possible alternative approaches to resource development —and then step out and allow local people to make the decisions on what will be done and how it will be done. Local people know more about their resources and potentials than assisting agencies. Professionals must listen well to what local people have to say about resource development.

(4) Resource planning and development must be carried on with the *participation* and *support* of *all* people in the area. A few leaders working alone with public agency representatives can't do the job. People in the area must become personally involved in resource planning and development. The very process through which a successful community plan for action is developed provides the leaders and sponsors a source of strength. The step-by-step consideration of community problems, opportunities, and aspirations— first in neighborhood groups, then by larger communities and conservation districts, and finally by the steering committee — provides a solid base for coordinated community action.

(5) Local people and public agencies working together as a team can accomplish more in resource development than can fragmented single-purpose groups and single-agency programs. All agency work is more effective when operating under local leadership and coordination. Indeed, the whole idea of RC&D projects is to use existing programs of all agencies, to eliminate duplication and confusion, to coordinate all programs, and to promote cooperation in the development of programs that will satisfy community needs.

(6) Some public agencies, which have not had the experience of the Soil Conservation Service in working directly with local groups in carrying out locally directed programs, find it difficult to understand and accept the concept of local people formulating and carrying out their own plans and shaping agency programs to meet local community objectives. Since the help of many nonconservation agencies is needed in most RC&D projects, part of our job, it seems to me, is to help them understand the concept of local leadership that has been the keystone of our operations since soil conservation districts began to organize in 1937.

(7) Leadership and coordinating action at the rural community level is effective in resolving agency differences.

(8) Probably the most important lesson is that resource planning must be totally directed toward action. —D. A. WILLIAMS.

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Maine Community Improves Picnic Area

Story on page 62

A traditional picnicking area in Eustis, Maine, has been converted into a public campground and recreation area under the sponsorship of a nonprofit development corporation and with the assistance of the Soil Conservation Service, Farmers Home Administration, and State and local agencies.

Stately Norway pines provide shade and an inspiring atmosphere for large, quiet campsites on the shore of Flagstaff Lake. A recreation hall, playgrounds, and nature trails have been added. ♦